

AF



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant : Thomas LEUCHT et al.
Title : INTUMESCENT BODY
Serial No. : 10/538,871
Filed : August 18, 2005
Group Art Unit : 1771
Confirmation No. : 8789
Examiner : VO, Hai

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

September 5, 2008

REPLY BRIEF

Sir:

This is in response to the Examiner's answer dated July 9, 2008.

In connection with the rejection of claims 1-9, 15, and 16 under 35 U.S.C. 103(a) as being unpatentable over Nozaki et al (US 6,248,820) in view of Marx et al (US 4,774,268), the Examiner essentially reiterates the basis of the rejection by stating that Nozaki et al. teach a flame retardant for flameproof mesh sheets which does not generate harmful halogen gas. The flame retardant for mesh sheets comprises red phosphorus, an ammonium polyphosphate compound in an amount of 10 to 70 parts by weight based on 100 parts by weight of an aqueous dispersion, and a resin solid content (abstract). Ammonium polyphosphate acts as the flame retardant and would necessarily be an acid donor. The flame

retardant can be used to impregnate flameproof mesh sheets woven out of coated yarn (col. 3, lines 6-8). The polymer can be a polyurethane having the main structure of a polyester (col. 4, line 23). The red phosphorus promotes the carbonization of polyurethane (col. 5, lines 60-62), which necessarily acts as a carbon donor. The polyurethane aqueous dispersion is present in amounts of about 10 to 70 wt. % (col. 4, lines 45-46).

However, in this Answer, the Examiner introduces what appears to be a new ground of rejection by stating that:

[T]he flame retardant coating comprises a foaming agent (column 7, lines 60-65). Likewise, it is clearly apparent that the **blowing agent** in the coating material **may expand** upon exposure to heat or flame **during a fire of sufficient severity** to induce **charring of the coating material**, thereby forming a flame extinguishing foam. (Emphasis added).

As admitted by the Examiner, the inclusion of the blowing agent may (and therefore may not) expand the coating material. This is nothing more than a conclusatory statement at best. After all, blowing agents are usually included in a formulation to generate a foam at the time the cross-linking and the like are initiated so that the polymer can be expanded into a cellular state with either open or closed cells. The section relied upon by the Examiner to suggest the inclusion of a "foaming agent" is such as to state:

One or more of a pigment, dye, ultraviolet absorber, optical stabilizer, antioxidant,

diluent, thickening agent, foaming agent, mold preventing agent, algae preventing agent and the like can be used in conjunction with the flame retardant in the present invention by suitably selecting types and amounts thereof.

There is nothing to suggest that if a foaming agent were to be used, it will not be a conventional use and not one that is contingent on being exposed to a fire of "sufficient intensity." Indeed, it would be essential if the blowing agent were to be arranged responsive to a fire and the temperatures associated therewith, that some disclosure that this particular temperature responsive nature would be necessary before the hypothetical person of ordinary skill would be aware that such characteristics were necessary and to select the blowing/foaming agent accordingly.

After all, these temperatures would have to near to or in excess of temperatures at which the product and/or the fire retardant would undergo thermal damage and/or combust and therefore in excess of the temperatures at which normal foaming is induced.

In connection with the transparent requirement of the claimed subject matter the Examiner relies on Nozaki at column 4, lines 58-67 to suggest that the red phosphorous that is provided may provide a strong red tint if too much is used.

The Examiner again draws the conclusion that this "at least implies that the coating is transparent." Appellants again disagree. People often have their hair tinted such as to hide grey hair. However this does not imply that the person's hair was transparent to begin with or was rendered transparent by the tinting process. Again, there

is nothing to support this untenable conclusion.

Tinting is to add a color. The material/substance which is tinted can be opaque and there is nothing so substantiate the assertion that it would infer transparency. Note the example of tinted grey hair *supra*.

The Examiner's Answer is such as maintain the position that:

Alternatively, while the reference does not require the coating to be transparent it would have been obvious to a person having ordinary skill in the art to do so in order to be able to view the underlying substrate.

Why? One usually coats surfaces to hide the same, for example, painting. Further, it would seem that transparency would seem to reduce the ability to accurately determine if the surface of a structure has been completely coated with the flame retardant coating. The Examiner's position is nothing more than an unsubstantiated conclusion motivated by apparently nothing more than the claims at issue.

The rejection should be reversed for at least this reason.

In connection with the rejection of claim 14 under 35 U.S.C. 103(a) as being unpatentable over Nozaki et al. (US 6,248,820) in view of Marx et al. (US 4,774,268) as applied to claim 1 above, and further in view of Maples (US 6,284,343), the Examiner indicates that Nozaki et al. do not specifically teach an agent for deaeration. Indeed Nozaki et al. do not.

However, this must be compared with the Examiner's previously discussed attempt to introduce a foaming agent and the current position that "[D]eformers are known in the art as equivalents of

deaerating agents. It would have been obvious to one having ordinary skill in the art at the time the invention was made to add a defoaming agent to the polyurethane dispersion of Nozaki et al. motivated to remove oxygen and **prevent the coating from foaming.**" (Emphasis added)

We now have an attempt to cause foaming and one to prevent foaming in the flame retardant of Nozaki et al. It appears that one cannot have both without clear teachings of how these can co-exist and why one would not interfere with the other. The rejection is seemed untenable for at least this reason and should be reversed.

In response to the arguments advanced in the Appeal Brief, the Examiner takes issue with the position that the generation of CO₂ and nitrogen fails to suggest the formation of a flame extinguishing foam. The Examiner disagrees with this based on the Nozaki flame retardant coating "may" (viz., possibly) comprises a foaming agent (column 7, lines 60-65).

Further, as pointed out above, without teachings clearly indicating the same, the hypothetical person of ordinary skill would not normally include a blowing agent in the coating material which would expand upon exposure to heat or flame during a fire of sufficient severity to induce charring of the coating material. Indeed, as noted above, the blowing agent would be selected to generate gas at temperatures below that at which charring of coating material would occur so as to safely form a foam material. Why risk damage to the product by waiting to thermal damage is either imminent or occurring to activate the blowing agent? There is nothing in the art applied to suggest this.

In this Answer, the Examiner takes the position that "Nozaki uses

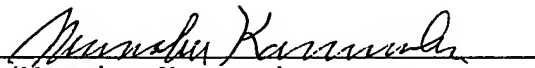
the same polymer to form a woven mesh sheet as Appellants. Nozaki discloses that the ammonium polyphosphate generates nitrogen gas which shuts off oxygen to the material. This appears to be the same mechanism that is provided by Appellants." The Examiner then proceeds to conclusion that "the generation of CO₂ and nitrogen gases would cause the coating to swell and would thus fall within a reasonable definition of an intumescent material."

This appears to be deviation/contradiction from the position discussed *supra* that a foaming and/or blowing agent would produce this effect. Further, combustion at the surface while producing CO₂ and N₂ would not necessary produce any notable swelling.

Conclusion

The Examiner's positions noted above, contain at least contradictory assertions and are highly, if not entirely, conclusatory in nature. The tenability of the rejection is obviated in light of these and the rejections should be reversed.

Respectfully submitted,

by 
Manabu Kanesaka
Reg. No. 31,467
Agent for Applicants

1700 Diagonal road, Suite 310
Alexandria, Virginia 22314
(703) 519-9785